

REMARKS

The claims have been amended based on, e.g., the examples in the application to distinguish the recited invention from the cited art more clearly.

Entry of the above amendment is respectfully requested.

Art Rejections

On page 2 of the Office Action, claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Bost (US 3,963,571). In addition, on page 3 of the Office Action, claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bost (US 3,963,571) and Nakajima et al (US 5,300,654) in combination. Also, on page 4 of the Office Action, claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bost and Nakajima et al as applied to claim 2, and further in view of Makita (JP 2002220361).

Applicants respectfully submit that the invention as recited in the amended claims is neither anticipated by nor obvious over the cited art, and request that the Examiner reconsider and withdraw these rejections in view of the following remarks.

Initially, Applicants note that as the Examiner pointed out, Bost discloses the following two processes as the method of converting a cyclic α -hydroxyketone (cyclic acyloin, 2-hydroxycycloalkanone) to a cyclic ketone (cycloalkanone) (see U.S. Patent 3,963,571, column 2, lines 36-68).

(1) Direct reduction method

(2) Two-step method consisting of dehydration and subsequent selective hydrogenation

Applicants submit that a more accurate expression of the reaction in process (1) above is (1') reductive dehydroxylation, which is a completely different reaction from selective hydrogenation to a double bond in process (2). (The fact that the reaction in the foregoing processes (1) and (2) are essentially different from each other will be explained later.)

In addition, Bost mentions, as a specific condition for process (1), a method of using zinc and hydrochloric acid (hydrogen chloride), but is silent about the specific condition for process (2).

In contrast, Applicants submit that the method of the present invention is one resulting from the improvement of process (2). Namely, Applicants have invented an effective method in which the two reactions cited in process (2) are conducted as a one-pot reaction in a single step. Moreover, the present invention not only conducts the reaction efficiently, but also provides the advantage of a higher reaction yield than that attained by conducting each reaction independently.

Applicants note that the Examiner considers that the method that uses zinc and hydrochloric acid disclosed by Bost is essentially the same as the two-step method consisting of dehydration and subsequent selective hydrogenation as set forth in process (2) wherein hydrochloric acid acts as a dehydration reaction catalyst while zinc as a selective hydrogenation reaction catalyst.

However, Applicants submit that the two reactions cited above are essentially different for the following two reasons.

(i) In the method using zinc and hydrochloric acid in process (1), hydrogen, which is essential for the selective hydrogenation reaction in process (2), is not required at all (see the reference, column 4, lines 50-67).

(ii) While the dehydration reaction and the selective hydrogenation reaction in process (2) both proceed as catalytic reactions (Nakajima et al, U.S. Patent 5,300,654, column 2, lines 44-45, and Makita, JP 2002-220361), the direct reduction method in process (1) with zinc and hydrochloric acid requires and consumes the stoichiometric amounts of zinc and hydrochloric acid. Moreover, due to side reactions, large excesses of zinc and hydrochloric acid are necessary and consumed. (See the cited reference, column 4, lines 56-61; for 0.023 mol of the raw material, 0.183 mol of zinc is required, which is roughly 8 times as large as the stoichiometric amount.)

From this fact, it is evident that the method of process (1) using zinc and hydrochloric acid is based on a completely different kind of reaction from the one via selective hydrogenation reaction of process (2). Namely, since the method of process (1) (i) does not require hydrogen and (ii) requires and consumes largely excessive amounts of zinc and hydrochloric acid, zinc cannot be regarded as a hydrogenation catalyst.

Thus, as has been described above, the two methods disclosed by Bost are essentially of different kinds, and it is not true that the two-step method consisting of dehydration and selective hydrogenation reaction in process (2) was conducted by the method using zinc and hydrochloric acid in process (1).

Accordingly, Applicants submit that the invention of claims 1 and 3 of the present application, which conducts the two-step method in process (2) simultaneously and compositely, is neither anticipated by nor obvious over the Bost method.

Moreover, Applicants submit that Nakajima does not cure the deficiency of Bost, so Applicants submit that claim 2 would not have been obvious even if the method of Nakajima were combined with that of Bost.

Further, Applicants submit that Makita does not cure the deficiencies of Bost and Nakajima, so Applicants submit that claim 4 would not have been obvious even if the method of Makita were combined with those of Bost and Nakajima.

In this regard, Applicants submit that the present method, which can achieve a higher yield than that of the two-step method, is more advantageous than the methods disclosed in the cited references.

Thus, Applicants submit that the present invention is neither anticipated by nor obvious over the cited art, and withdrawal of these rejections is respectfully requested.

Conclusion

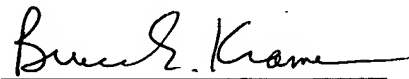
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 10/760,386

Attorney Docket No. Q79278

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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